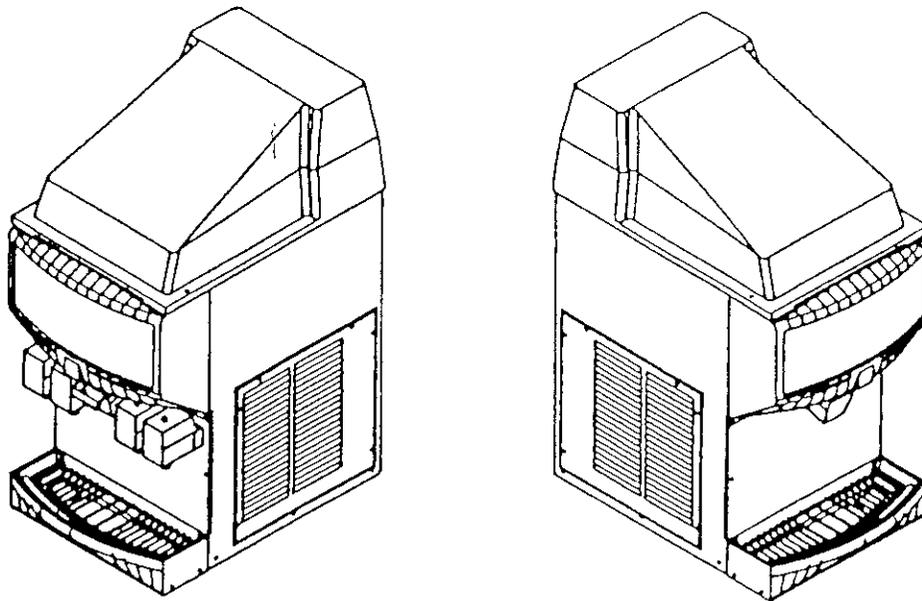


TM-DGSC-4110-823

REMCOR®
SPIRAL ICEMAKER DISPENSER
S.I.D.
OPERATION AND SERVICE MANUAL

MODEL:
SID350A/35S

CONTRACT NUMBER: _____
NSN 4110-00-306-9527



REMCOR PRODUCTS COMPANY
500 REGENCY DRIVE
GLENDALE HEIGHTS, IL 60139-2268

Rev. B

P/N 91505

Approval Date _____

An Equal Opportunity Employer

APPROVAL AND PROCUREMENT RECORD PAGE

APPROVAL DATA FOR: Defense General Supply Center Technical Manual For

PUBLICATION/CONTROL NUMBER: TM-DGSC-4110-823

APPROVAL AUTHORITY: Defense General Supply Center letter dated _____

Contract Number	NSN	Number of Units	Model	Voltage/ Other ID	Manuals
	4110-00-306-9527		SID350A/35S	115 01 60HZ	2

REMARKS:

1

CERTIFICATION:

DATE: _____

It is hereby certified that the DGSC Technical Manual for 4110-00-306-9527 to be provided under Contract _____ has been approved by the approval data shown above.

Ron Nastav
(Signature typed)
Contractor's Name :
Contractor's Address:

Icemaker Project Engineer
(Title)
Remcor Products Company
500 Regency Drive
Glendale Heights, IL 60139
(708) 980-6900

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INSTALLATION NOTICE

An Everpure Model 9320-42, Systems IV, Model DB900 (or equal) ice maker quality water treatment unit **MUST BE INSTALLED** in the water supply line to the ice maker. Failure to do so may result in poor quality ice, low production output, and may cause premature failure of the ice maker evaporator and void the extended evaporator warranty.

This ice maker is provided with a stainless steel evaporator designed to last the life of the product. But, some of the chemicals in treated and untreated water, specifically chlorine and sulphur (sulphide), have the ability to attack stainless steel and cause premature failure. An initial investment in proper water treatment will pay for itself in increased production, quality and long life of the product.

DESCRIPTION

The Remcor S.I.D. (Spiral Ice Maker/Dispenser) is a unique, self-contained, counter top style unit that automatically makes hard, clear cube quality ice and stores it in a sealed hopper for sanitary dispensing. The ice is made by a new, patented process on a spiral-shaped, stainless steel evaporator and produces true cube quality ice on the outside of the tubes. There are no augers; no compressing of flaked ice; no bearings; and no high gear motor loads in the ice making process. The unit has been designed to be simple, yet effective, to provide many years of trouble-free operation.

SPECIFICATIONS

COMPRESSOR:	HP: 1/2
REFRIGERANT:	R-22 1 Lb.
PRESSURE CONTROLS SETTING:	High: 400 PSIG Low: 10 PSIG
VOLTAGE:	115/1/60
AMPS:	16 amps
CIRCUIT AMPACITY:	20 amps
FUSE SIZE:	20 amps
ICE STORAGE CAPACITY:	35 Lbs.
ICE MAKING CAPACITY:	Up to 350 lbs./24 hours
SHIPPING WEIGHT:	170 lbs.

SID350A-35, R22, 50% Dump/Water and Ice/Ice Making
Capacity Per 24 Hr./Lb. at Given Conditions

ICEMAKER CAPACITIES (LBS/DAY)					
WATER TEMPERATURE °F					
AIR TEMP °F	40	50	60	70	80
60	391	372	355	342	318
70	356	334	321	310	301
80	316	303	295	281	270
90	290	267	259	241	241

UNPACKING

1. With the unit upright, carefully remove the shipping carton. Inspect for shipping damage and report any such damage to the shipper immediately.
2. Unscrew and remove the top cover of the unit.
3. Remove shipping tape from storage hopper and agitator in storage hopper.

INSTALLATION

1. LOCATION

Locate the icemaker-dispenser indoors in a well ventilated area. Avoid exposure to direct sunlight and/or heat caused by radiation. Ambient room temperature must be in the range of 60° to 90°F. Do not install unit in an enclosed area where heat build-up could be a problem. Note: Air flow direction and spacing required on Figure #1.

INSTALLATION CONTINUED

Consult Figure 1 and 2 (pages 4 and 5) for utility connection locations and for dimensions for mounting unit to the counter with the hardware provided. Note that the unit must be level for proper operation.

The unit must be sealed to the counter. The template drawing (Figure 1) indicates the openings which must be cut in the counter. Locate the desired position for the unit, then mark the outline dimensions and cut-out locations using the template drawing. Cut openings in counter.

Apply a continuous bead of NSF listed silastic sealant (dow 732 or equal) approximately 1/4" inside of the unit outline dimensions, and around all openings. Then position the unit on the counter within the outline dimensions. All excess sealant must be wiped away immediately.

2. PLUMBING

Connect the icemaker to a cold, potable water source, suitable for drinking. The water source must comply with the basic plumbing code of the Building Officials and Code Administrators International Inc. (BOCA) and the Food Service Sanitation Manual of the Food and Drug Administration. Do not install unit on a water softener line. It is recommended that a hand shut-off valve and strainer be used on the incoming supply line. (See Figure 2 for size and location). For proper operation of the incoming water

supply pressure must be in the range of 30-90 PSIG. Install a pressure regulating valve if above this range!!

IMPORTANT

To insure proper ice maker operation and also to reduce the frequency of water-related service problems, a water filter should be installed. Remcor recommends the use of one of the following basic systems:

- 1) **Everpure, Inc.**
660 No. Blackhawk Drive
Westmont, IL 60559
(708) 654-4000
InsurIce Twin System #9320-42
- 2) **Systems IV**
16632 Burke Lane
Huntington Beach, CA 92647
(714) 842-4221
Basic Water System #B1000

For specific recommendations on these filter system for your local conditions, consult with a distributor in your area or contact the filter manufacturer.

Connect separate drain lines to all drain connections. See Figure 2 for size and location. These lines must pitch downward to an open drain and must contain no traps, or improper drainage will result. Separate, not joined drain lines are required to prevent back flow.

Note: In areas where consistently warm water temperatures are encountered, the use of a pre-cooling in the water line is recommended to maximize the ice product of this unit.

INSTALLATION CONTINUED

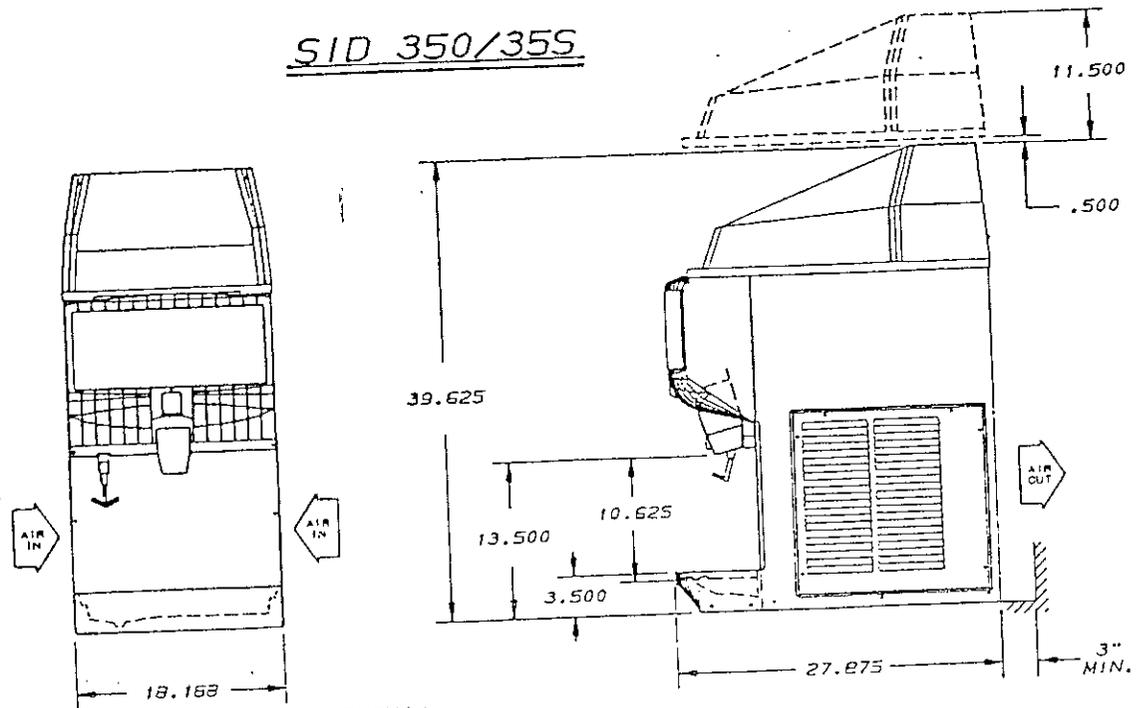
3. ELECTRICAL

This unit is supplied with a 2-wire with ground 6 foot long conductor and suitable plug for a standard 115 volt 20 amp circuit receptacle. This cord exits the unit through the base and should be routed per the National Electric Code.



Only qualified personnel should service internal components or electrical wiring.

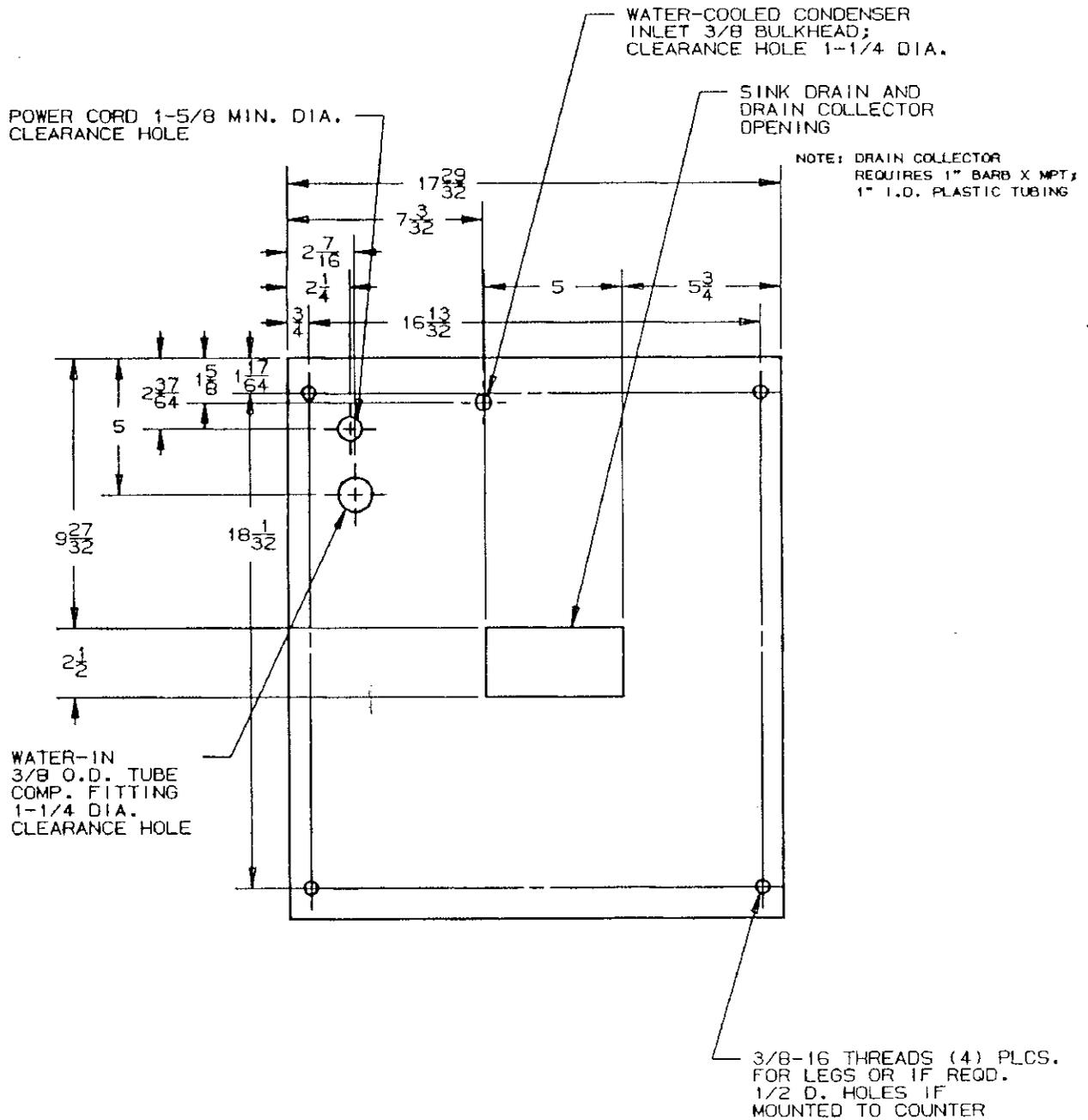
FIGURE I



CAUTION:

- 1) MINIMUM 3" CLEARANCE MUST BE PROVIDED AT THE REAR OF UNIT. (AIR FLOW OUT)
- 2) INLET AIR FLOW MAY ONLY BE RESTRICTED ON ONE SIDE. (AT LEAST ONE SIDE MUST BE OPEN FOR PROPER PERFORMANCE)
- 3) MINIMUM TOP CLEARANCE MUST BE 11,500.

FIGURE 2



MOUNTING TEMPLATE

MODELS: SID 350A/35
SID 350W/35

START UP

1. Remove front and side service panels and connect the water supply to the water valve.
2. Turn on water to icemaker. Depress fill switch to fill evaporator with water before starting unit.
3. Put the stop/run switch in the "run" position. Observe that the icemaker goes through proper icemaking and harvest cycle. If unit malfunctions, consult Trouble Shooting Section.

NOTE:

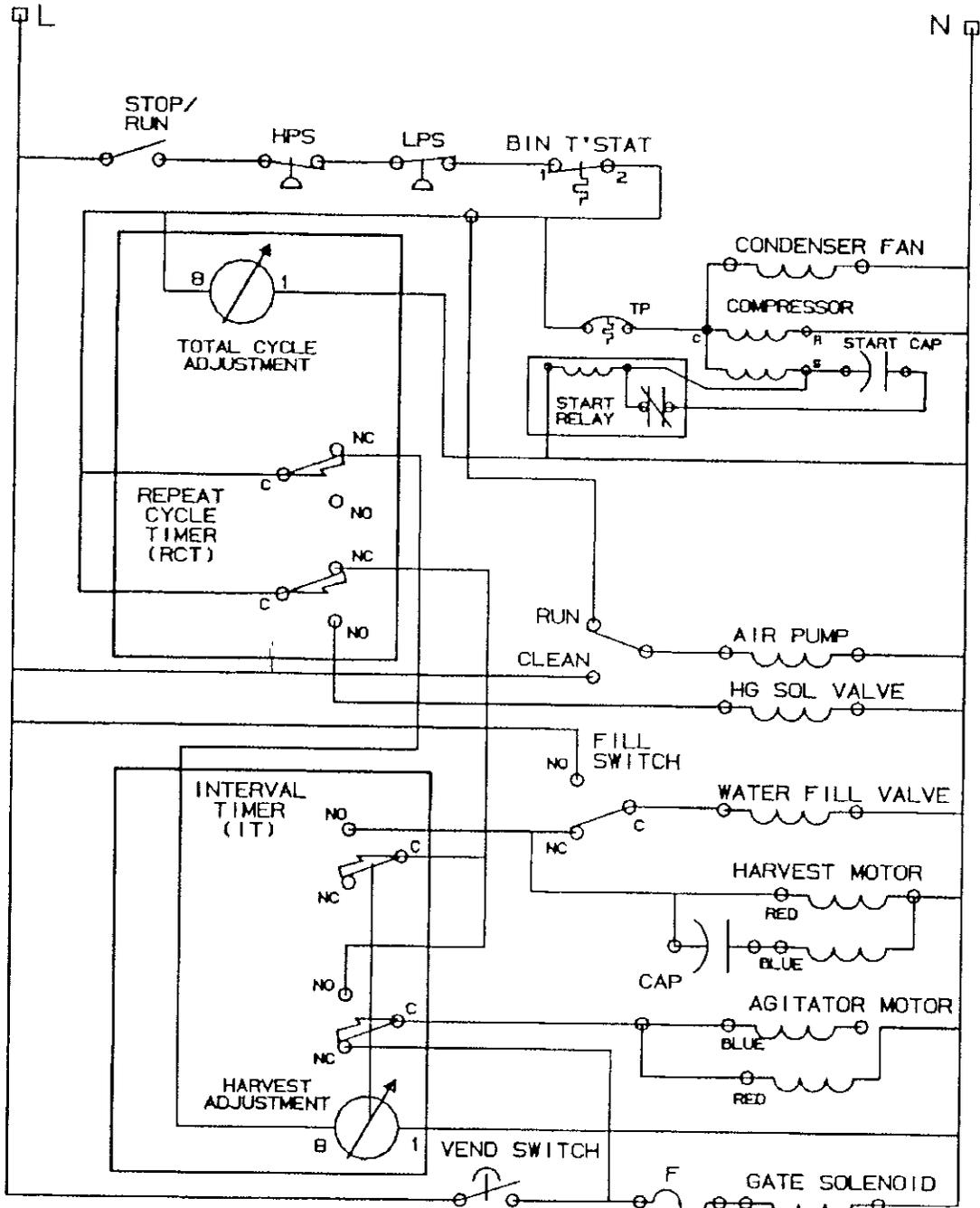
Due to meltage loss because of a warm storage hopper, it will take longer to fill the hopper the first time than when the icemaker has been operating continuously.

4. Depress the vend switch. (Check that both the gate solenoid and agitator motor are energized simultaneously to lift the gate slide and rotate the agitator in the storage hopper, respectively. If either component malfunctions, consult the Trouble Shooting Section.
5. The bin thermostat is calibrated at an atmospheric pressure equivalent at 500 feet above sea level. For locations at higher elevations, it may be necessary to re-adjust these controls. Consult the Maintenance/Adjustment Procedures Section.

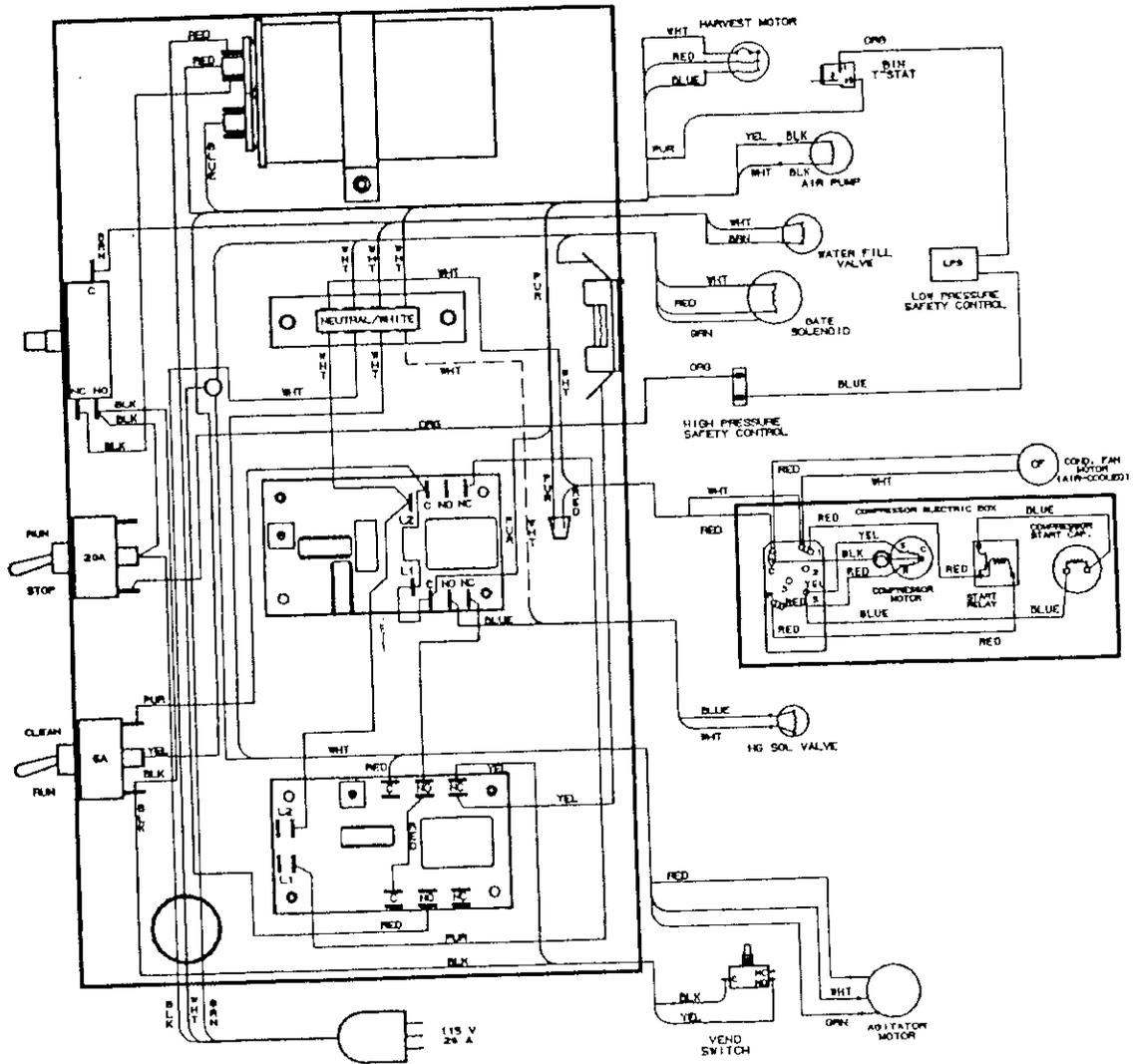
ICE PRODUCTION

1. Remove the top cover and lower front panel.
2. Collect and weight the ice produced during the harvest cycle. The amount of ice harvested should be 1.9 to 2.1 pounds.
 - A. Put the stop/run switch in the "stop" position. (If unit is in the icemaking cycle, stop the unit at the end of the harvest cycle).
3. If ice weight is not in the 1.9 to 2.1 pound range, make adjustments by adding or subtracting time to the total cycle time. More time equals more ice.
4. Return unit to normal ice making mode and repeat steps 2 and 3, until proper amount of ice is delivered per cycle.

SCHEMATIC SID350A 115/1/60 HZ.



SID 350/35 115/1/60 Hz WIRING



MAINTENANCE

It is recommended that the air cooled condenser be cleaned every three (3) months or sooner depending on the operating environment for proper refrigeration system performance. Check that this condenser is free of dirt/foreign material that could cause air flow blockage.

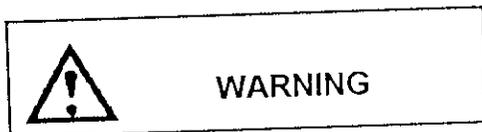
Cleaning of the icemaker is recommended on a regular basis not only for sanitary reasons but also to maintain the performance of the unit. Build-up of lime and scale can hinder icemaking production rates and interfere with proper dispensing of the ice. See Cleaning Section for the recommended procedure.

Periodically, check the vending area sink for proper water drainage. Remove any foreign material from the sink to prevent drain blockage.

CLEANING INSTRUCTIONS

IMPORTANT

The icemaker should be cleaned at a minimum of 3 month intervals or more frequently depending on local water conditions. The storage hopper interior should be cleaned at least once a month.

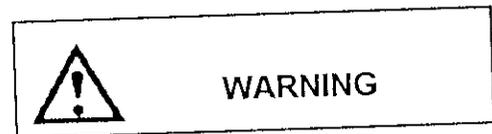


Do not use metal scrapers, sharp objects or abrasives on the surface of the storage hopper, as damage may result. Do not use solvents or other cleaning agents as they may attack the plastic surface. Use

only the recommended chemicals and solutions for both the icemaker and hopper.

ICEMAKER SECTION

1. Remove top cover, lower front panel and right side access panel.
2. Put the stop/run switch in the "stop" position at the end of the harvest cycle. An alternate method would be to stop the unit during the icemaking cycle and allow ice in the evaporator to melt by waiting for at least 1 hour before beginning the cleaning procedure. The flush switch can be depressed to bring in warmer water to help the melting process.



Electrical power is on to unit during icemaker cleaning mode. To avoid possible injury, do not reach into hopper or into icemaker nozzle. Do not contact exposed electrical wiring and components.

3. Plug icemaker drain line located in the drain collector at condenser fan motor. (1-1/4 OD hose).
4. Fill icemaker drain hose with water by pushing fill switch.

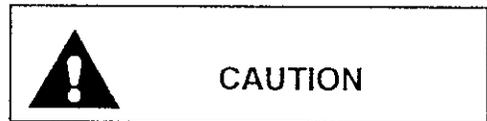
CLEANING INSTRUCTIONS CONTINUED

5. Add 4 oz. of Virginia Ice Machine Cleaner (or equivalent) through the evaporator outlet.



Virginia Ice Machine Cleaner (or equivalent) is a mild acid. Normal care should be taken, keep out of eyes and cuts. Read warnings on package before using. Do not operate unit in the cleaning mode without the ice drop cover in place. There may be some overflow of cleaning solution through the evaporator vent tube during the cleaning cycle.

6. Seal the evaporator outlet with plastic plug provided with the unit.
7. Depress fill switch and fill evaporator (when fluid flows out of evaporator through vent tube, release fill switch.
8. Put the clean/run switch in the "clean" position. Allow unit to run in the cleaning mode for at least 30 minutes.
9. Open drain line. To avoid splash, drain the drain line to a separate container.
10. Depress fill switch and hold for 6 minutes to flush solution out of evaporator. Drain line should be in the drain collector.
11. Plug drain line.
12. Depress fill switch and hold for 1 minute to flush solution out of vent line.
13. Open drain line. Put clean/run switch in the "run" position. Remove plug from evaporator.
14. Put the stop/run switch in the "run" position and allow unit to run through at least 3 complete icemaking and harvest cycles, and until ice is free of "sweet" taste.



If unit fails to harvest, put the stop/run switch in the "stop" position and flush the evaporator with hot water to melt remaining ice and repeat steps 10, 11, 12 and 13 to clean out remaining solution.

15. Dispenser all ice out of storage hopper and discard.

DISPENSER SECTION

16. Turn off main electrical power supply to machine.
17. Remove agitator assembly from storage hopper and wash and rinse it thoroughly.
18. Wash down all inside surfaces of the ice storage area including the top cover with a mild detergent solution and rinse thoroughly to remove all traces of detergent.
19. Replace agitator.

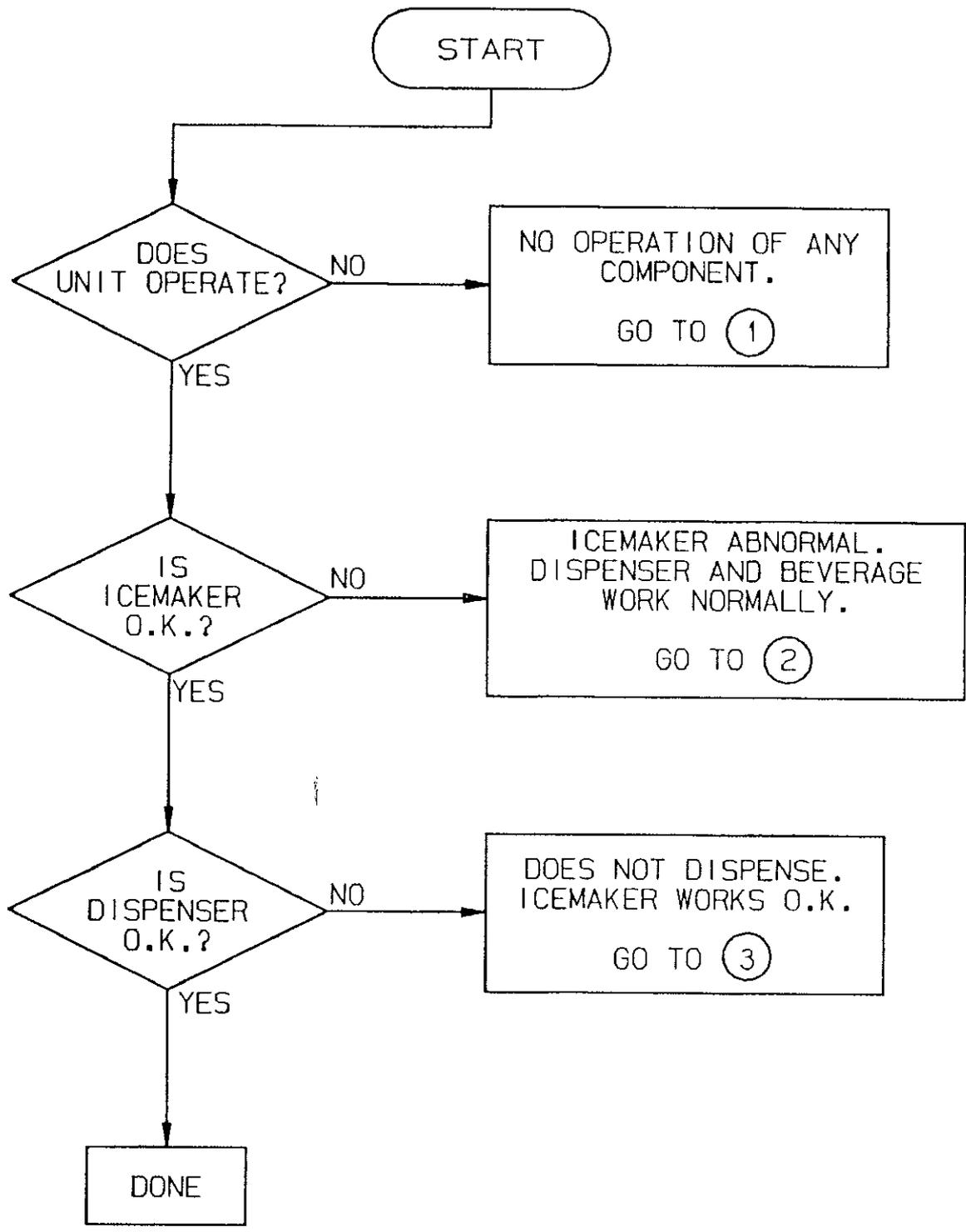
CLEANING INSTRUCTIONS CONTINUED

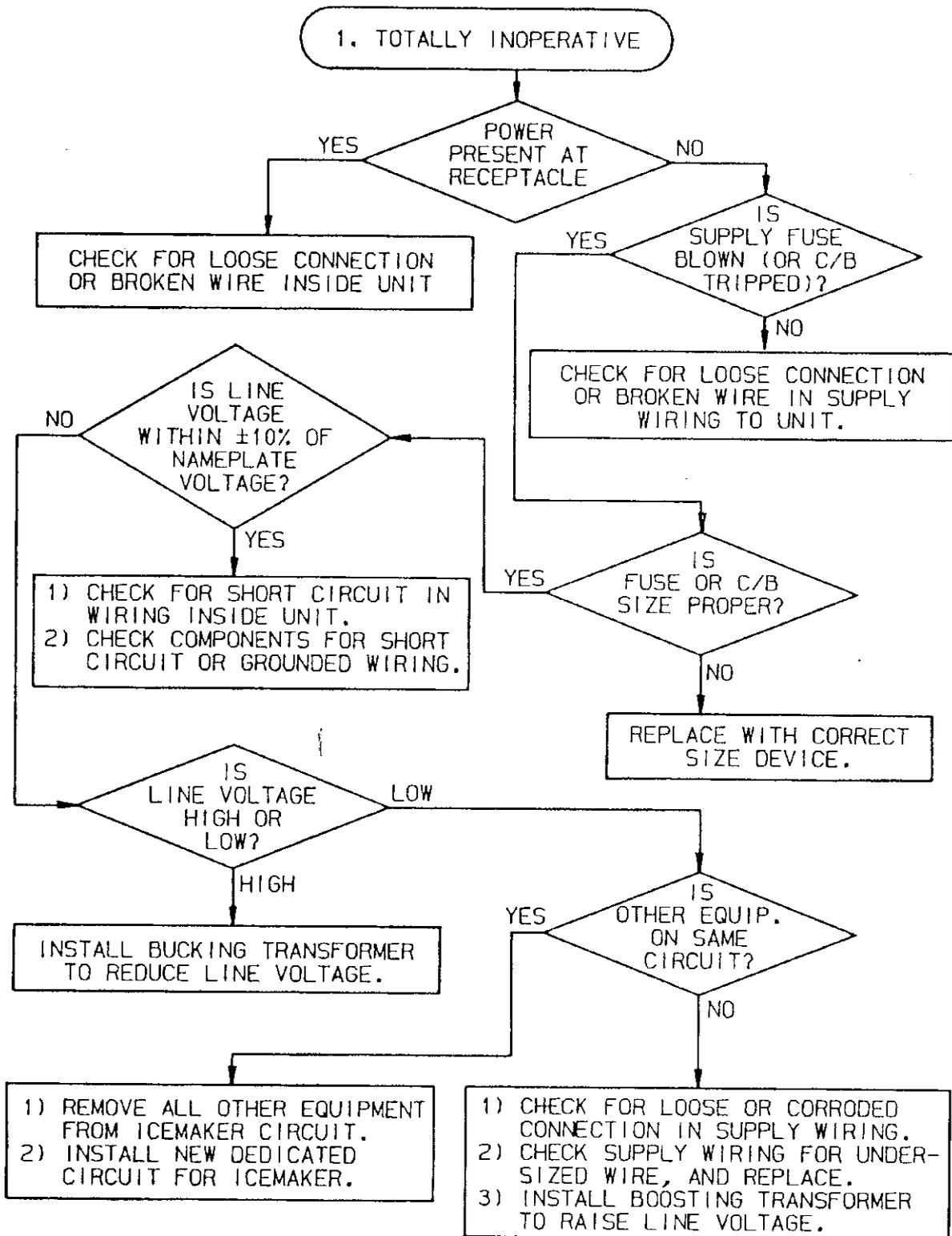
20. With brush provided, clean the inside of the ice chute with mild detergent solution and rinse thoroughly to remove all traces of detergent.
 21. Sanitize the inside of the hopper, agitator and the ice chute with a solution of 1/2 oz. of household bleach in 1 gallon of water (200 PPM).
 22. Replace the top cover. Turn on the electrical power supply. The icemaker is ready for normal operation.
4. If, after checking all indicated causes, the problem is not resolved, it is recommended that you retry a second time, carefully evaluating the symptoms and modifying your answers as necessary.
 5. If you are unable to resolve a problem after several attempts, contact Remcor Customer Service for assistance.

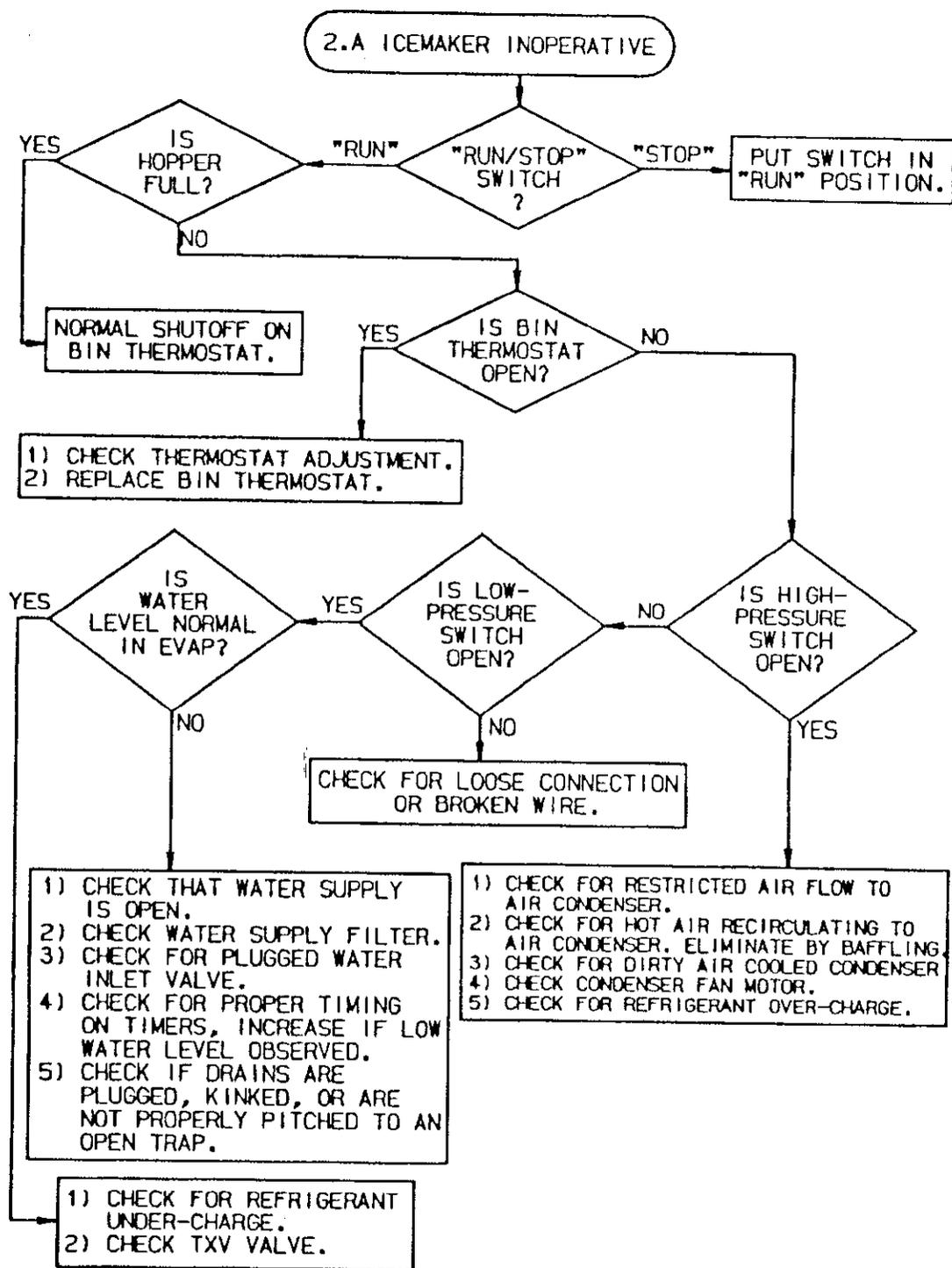
TROUBLE SHOOTING GUIDE

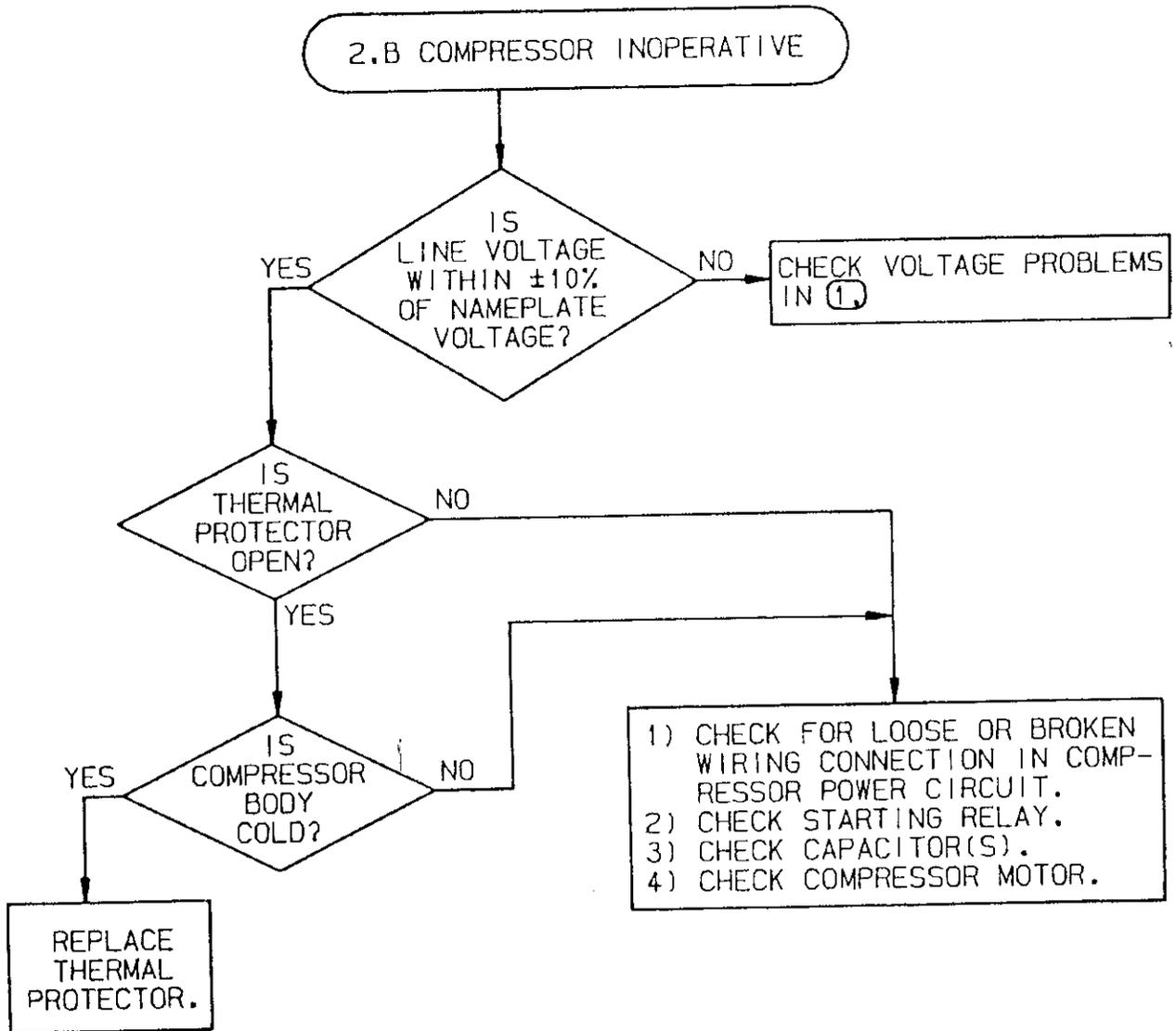
The following pages contain Trouble Shooting charts designed to aid an experienced service person in diagnosing any operating problems which may be experienced. It is assumed that normal service techniques and skills are familiar to the person doing the trouble shooting. In order to gain maximum benefit from these charts, please note:

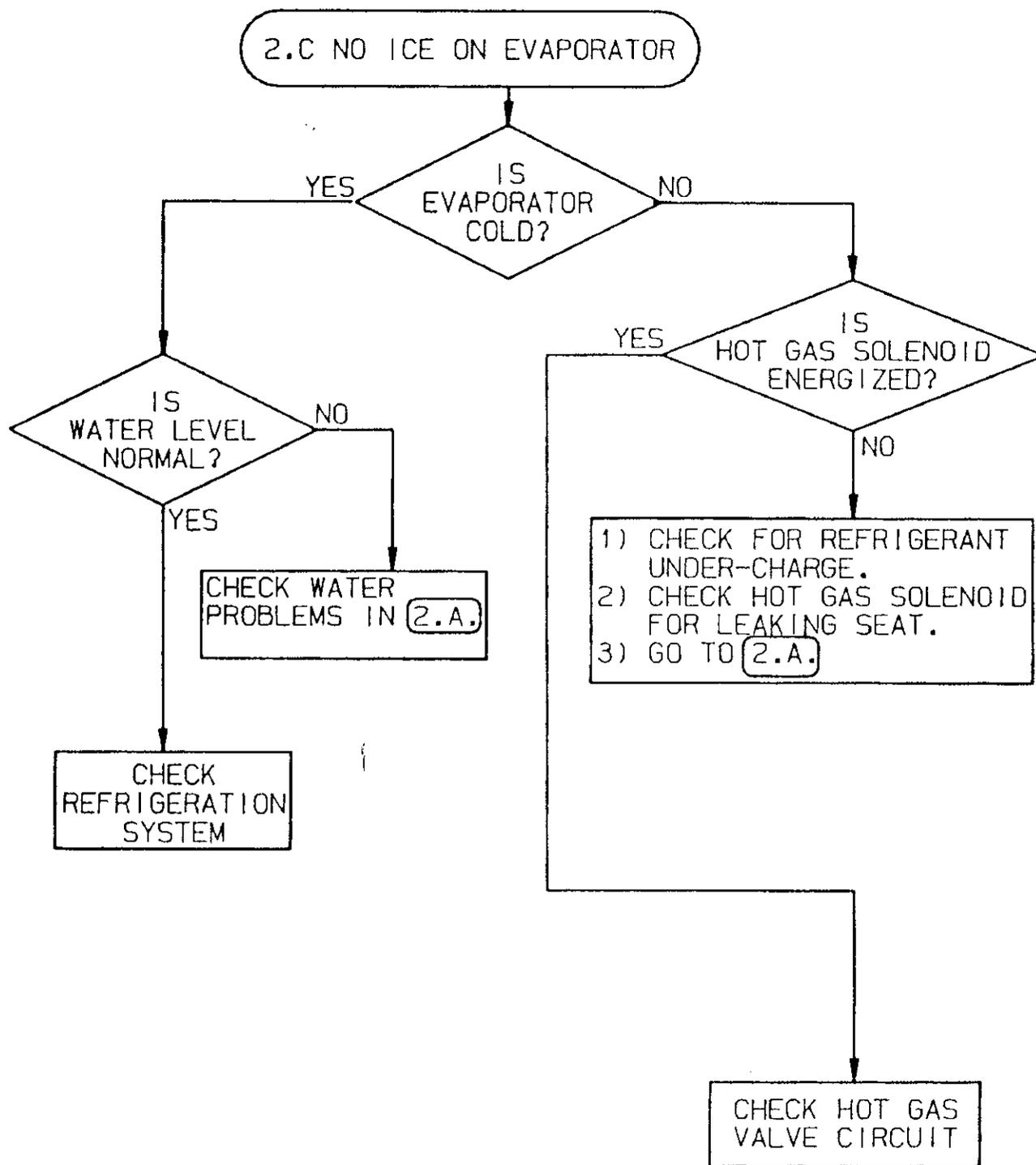
1. Start at the beginning of the chart and supply the appropriate answer to each questions.
2. Do not skip any section, unless instructed to do so. You might miss the solution to your problem.
3. Evaluate the possible problem causes in the sequence in which they are presented. In general, they begin with the most likely or easiest to check, and proceed to the less likely or more complicated.

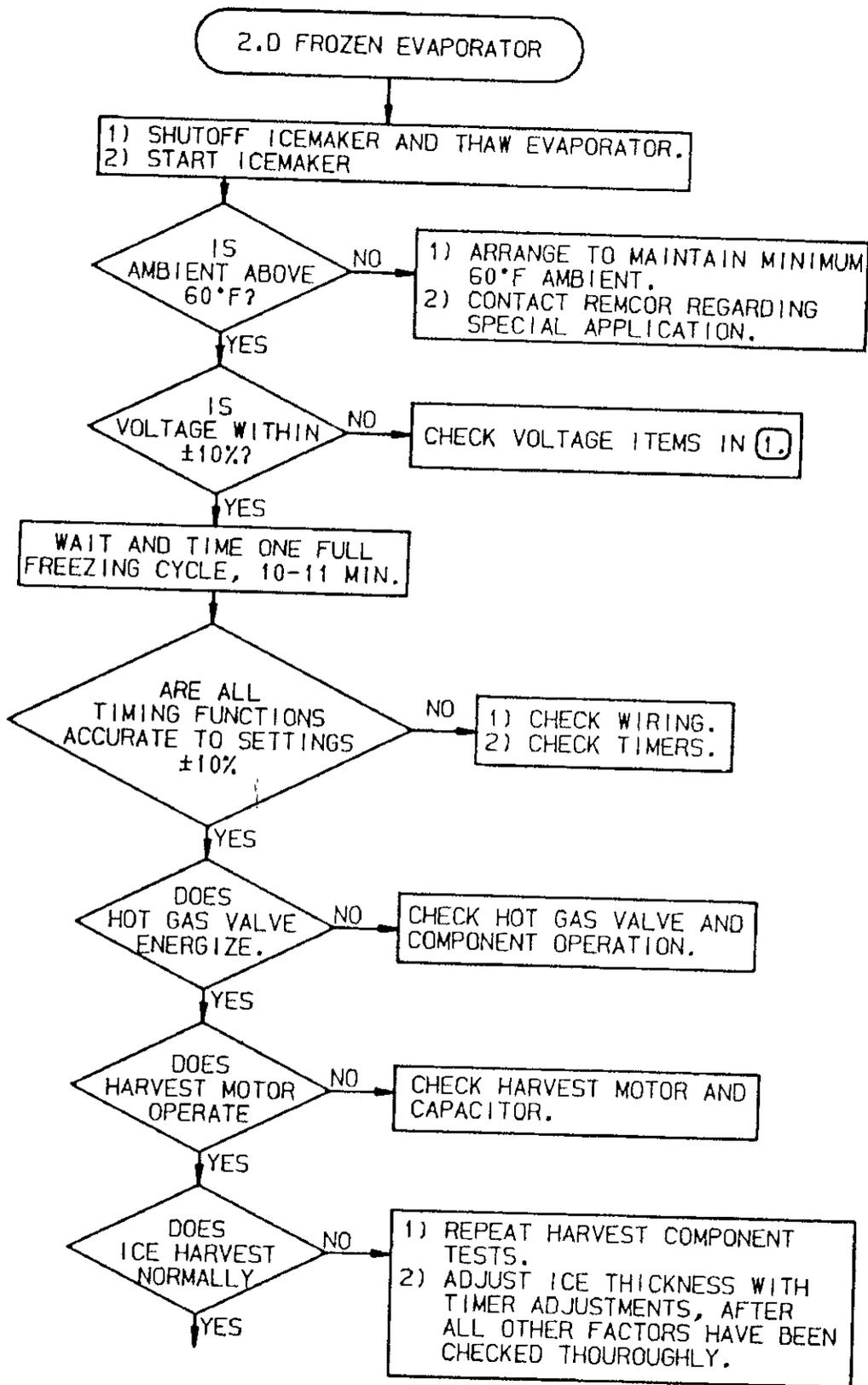


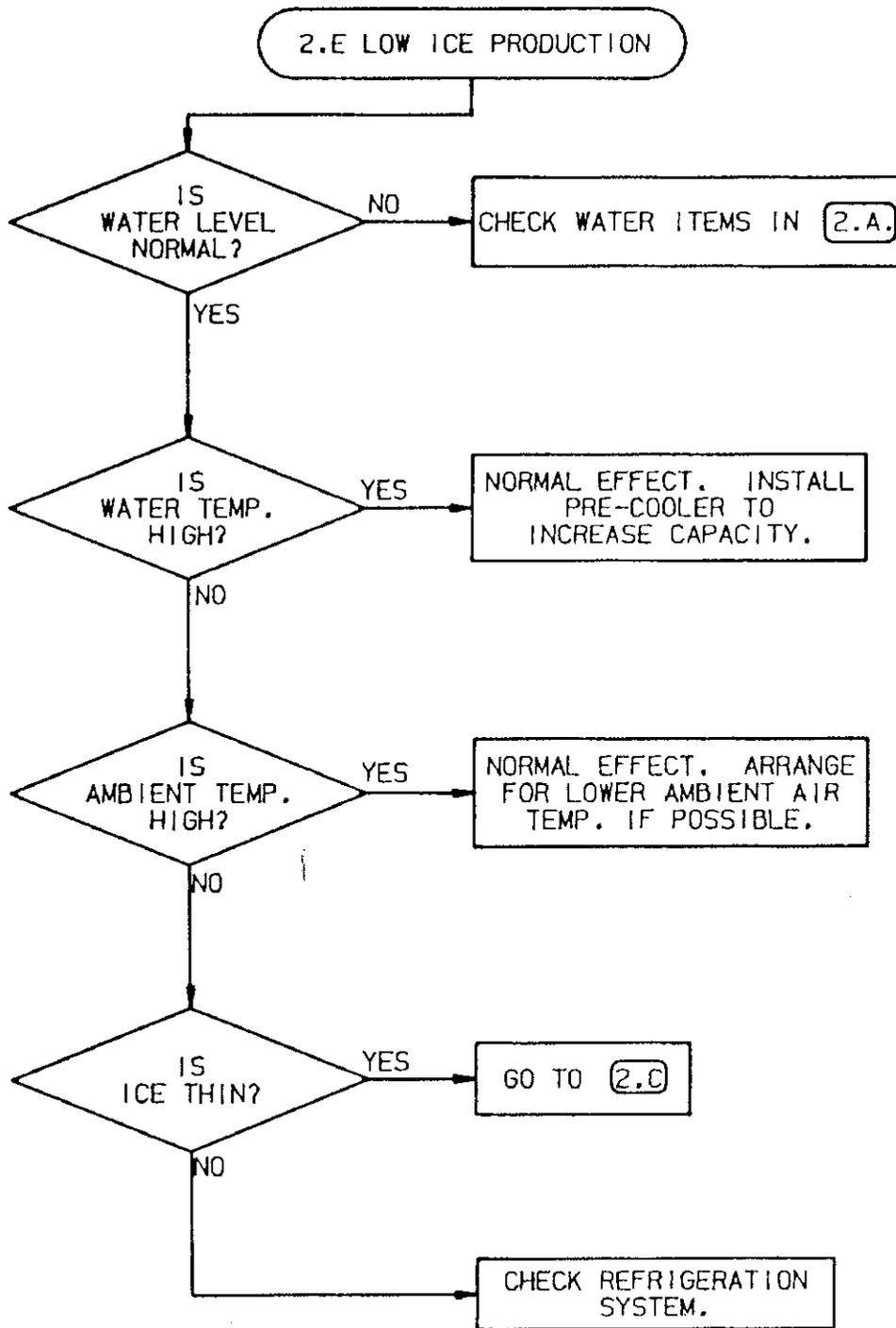


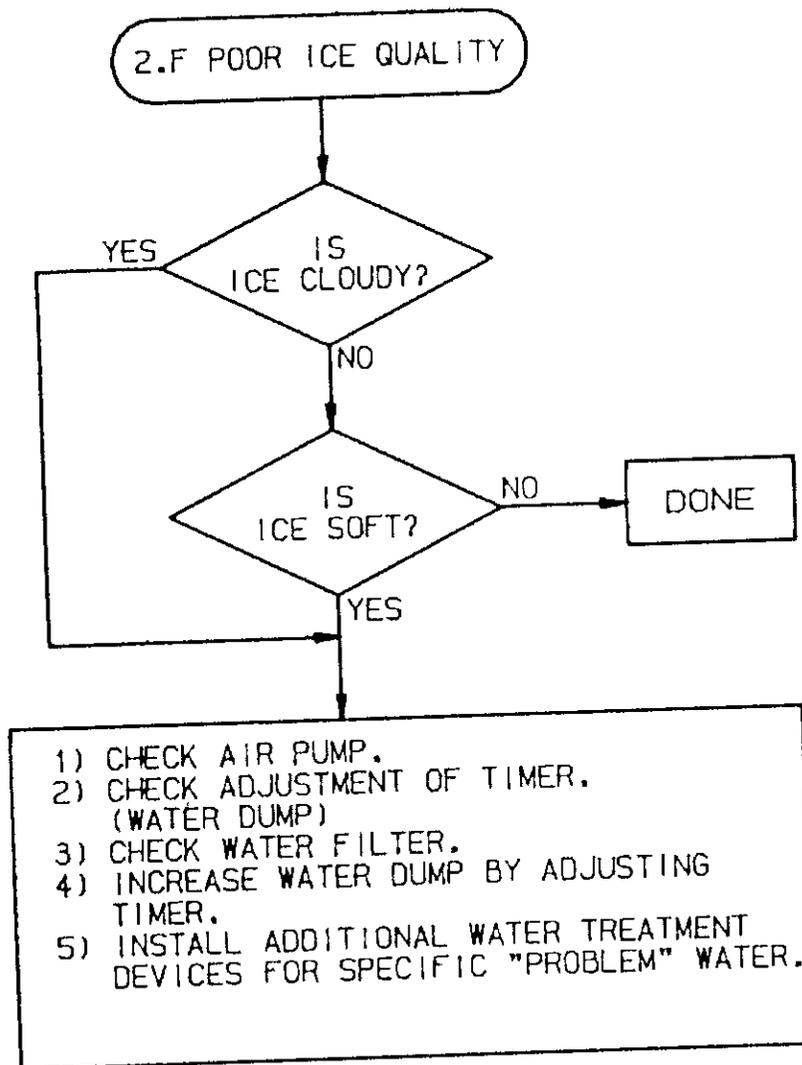


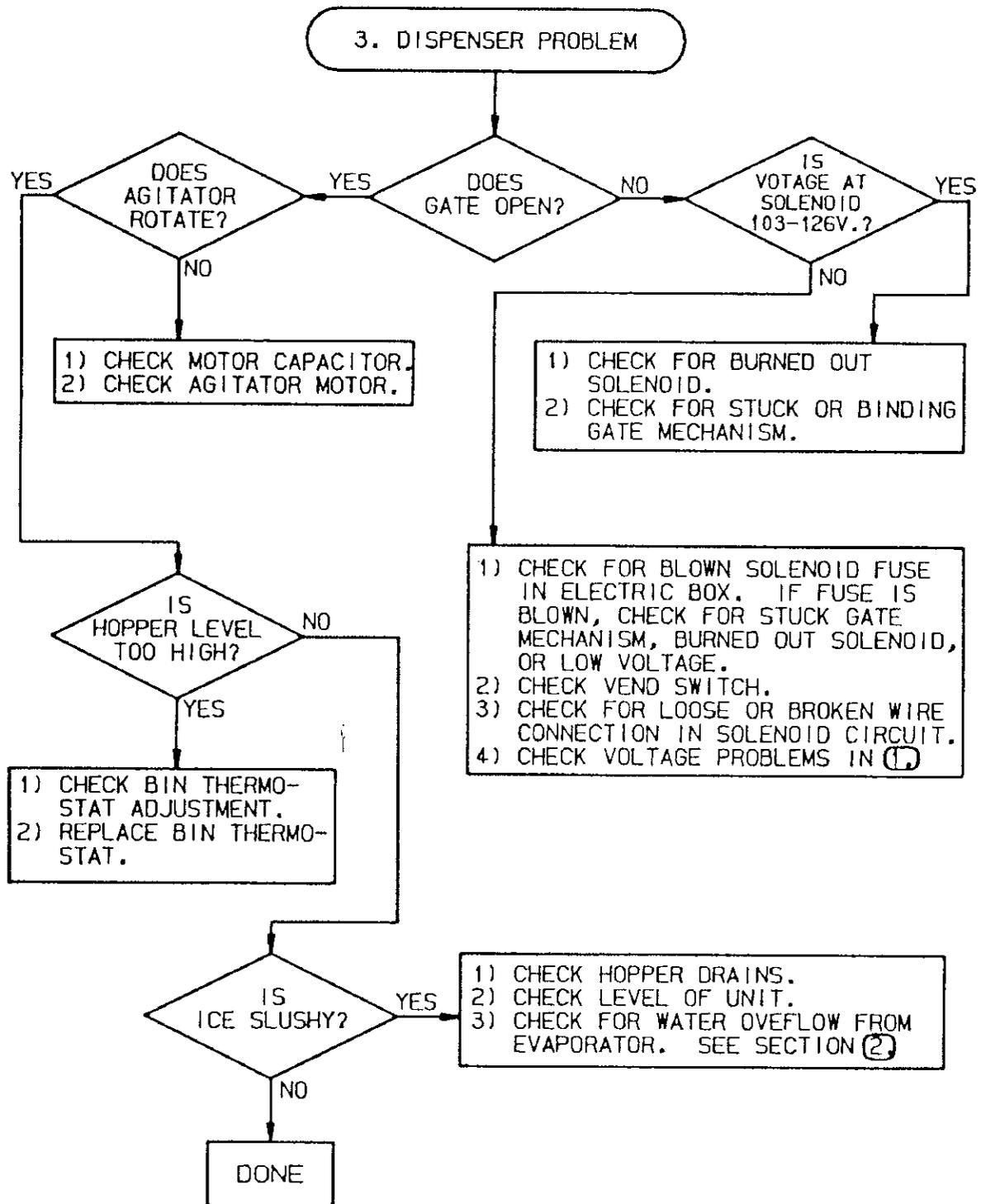












MAINTENANCE AND ADJUSTMENTS

THERMOSTAT ALTITUDE ADJUSTMENT

BIN THERMOSTAT

IMPORTANT

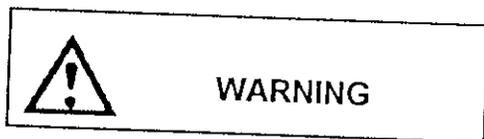
Adjust the bin thermostat setting only if storage hopper overfill is a problem.

1. Remove the top plastic cover.
2. The adjustment screw is located at the right upper rear corner of the unit behind the hopper-evaporator partition.
3. For altitudes up to 6,000 feet, turn the adjustment screw Counter-Clockwise as follows:

<u>ELEVATION (FT)</u>	<u>CCW TURN</u>
2,000	1/13
4,000	1/6
6,000	1/4

4. For altitudes above 6,000 feet, consult the factory.

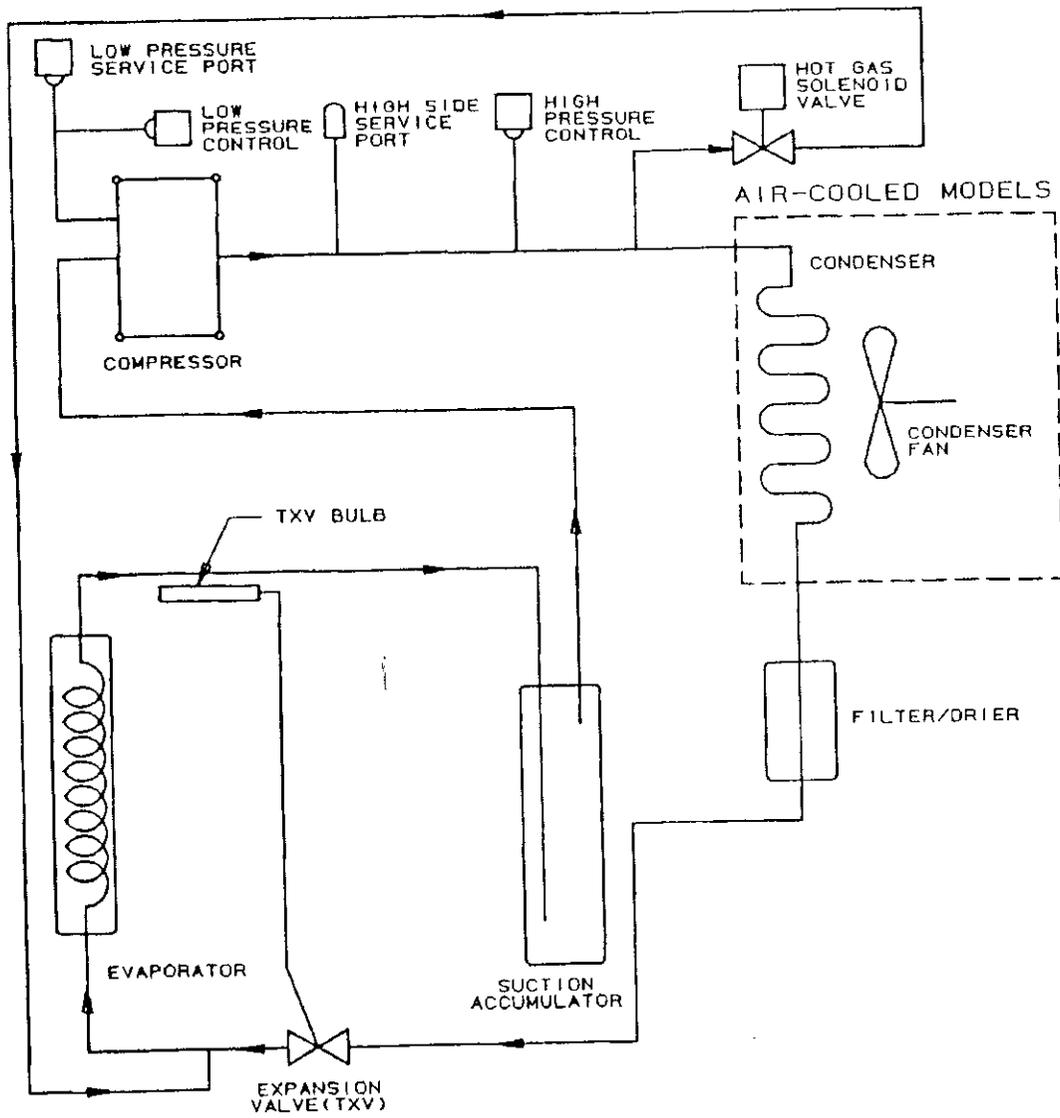
CLEARING EVAPORATOR FREEZE-UP



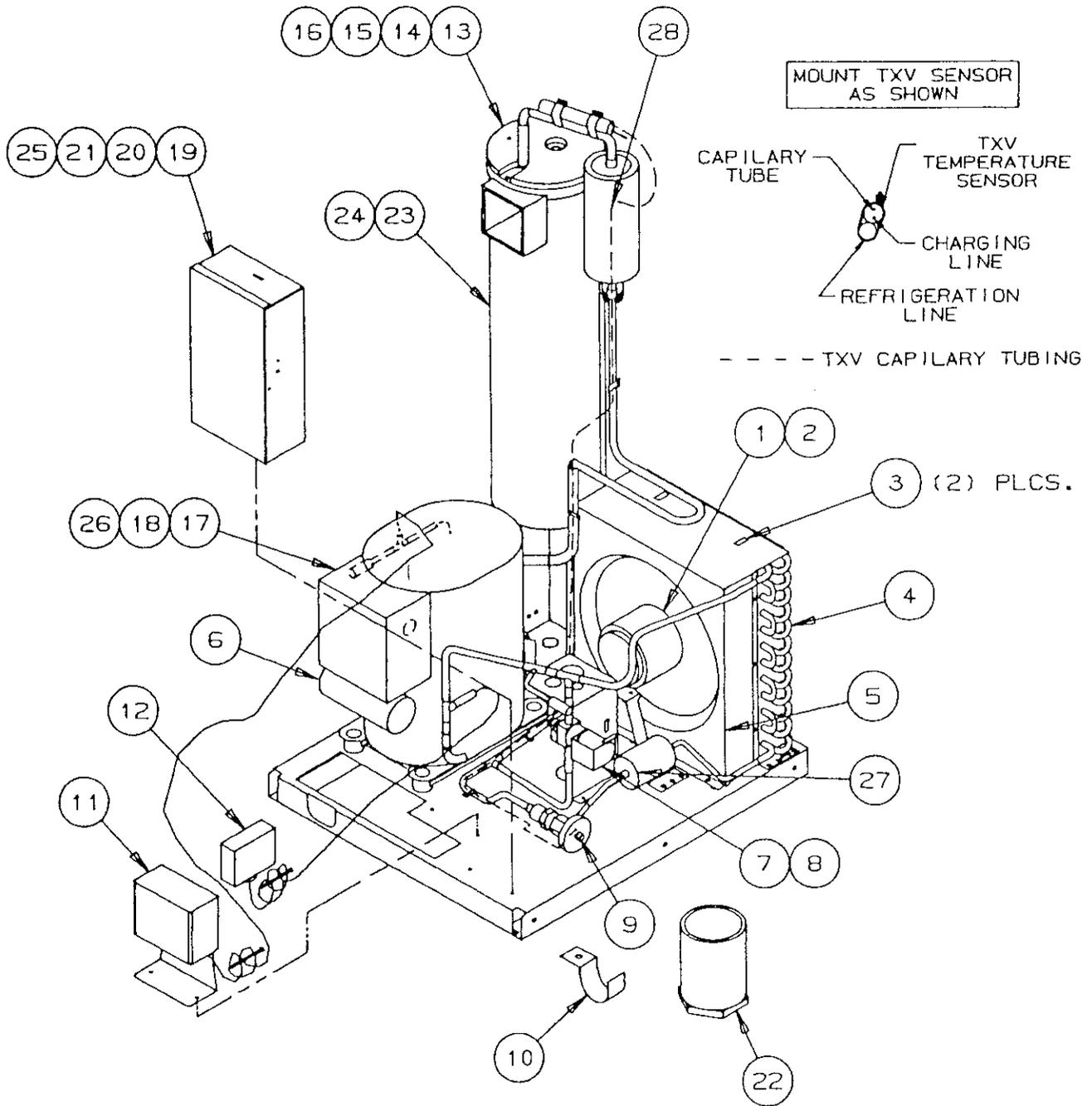
To prevent possible injury, do not stick fingers or hand into icemaker nozzle or hopper with power applied to unit.

1. Remove four (4) screws and remove the hopper cover.
2. Put the stop/run switch in the "stop" position.
3. Close the water supply valve to the icemaker.
4. Drain evaporator by disconnecting the water inlet tube at the bottom of the evaporator, when empty reconnect water inlet.
5. Pour hot water into the evaporator ice exit opening. It will be necessary to use either a funnel or a container with a spout. Fill the evaporator completely.
6. Drain the evaporator. Repeat steps 5 and 6 as required to insure that all of the ice in the evaporator is melted.
7. Open the water supply valve and refill evaporator.
8. Consult the Trouble Shooting Guide to determine cause of freeze up before putting unit back in service.

REFRIGERATION SCHEMATIC



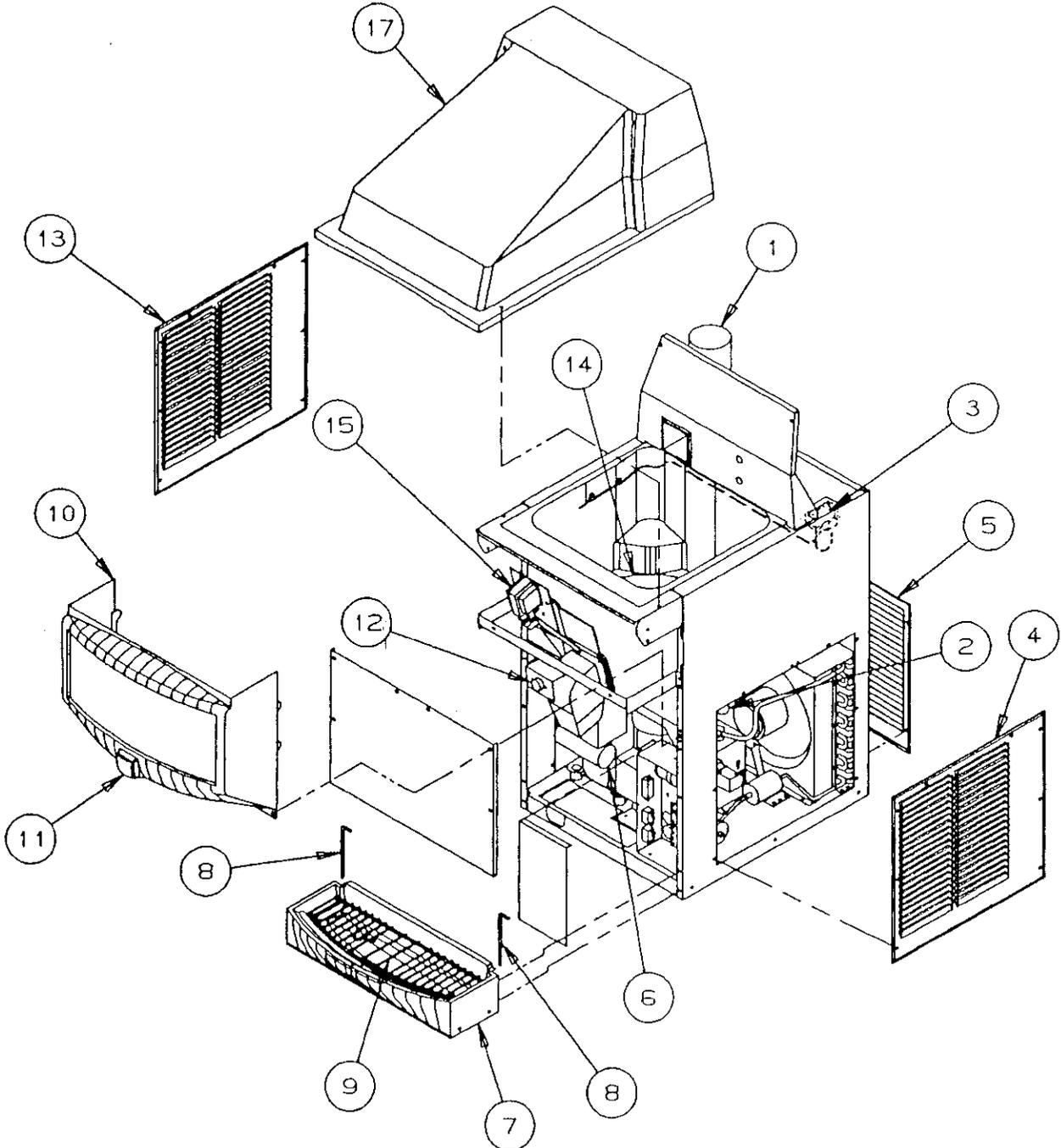
CONDENSING UNIT 60939



**SERVICE PARTS LIST
CONDENSING UNIT 60639**

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>MFR NAME</u>	<u>MFR P/N</u>
1	31572	Fan Motor	Morrill	SP-B16EMI
2	31927	Fan Blade	Morrill	FT950CW30P
3	70404	Tinnerman Clip	Tinnerman	C23200-025-4
4	60962	Condenser	Heatcraft	2CZ0803N
5	52078	Shroud	Stanhope	Per our drwg #52078
6	32778	Capacitor-Start 270-324 MF, 110V	Copeland	0140-008-69
7	32576	Hot Gas Solenoid Coil	Alco Cont. Emerson	AMS 120V 50/60 HZ
8	60734	Hot Gas Valve	Alco Cont. Emerson	200RB4T3T VLC
9	60917	TXV NIV-1/4-SP	Sporlan	IVY4C/10' CAP TUBE
10	70577	Clamp	Ideal Clamp	5888
11	60369	Low Pressure Control	Johnson	P70AB-2
12	60501	High Pressure Control	Johnson	P20DB-1
13	51485	Evaporator Shell-Foamed	Remcor	
14	50481	Gasket	Remcor	
15	51374	Gasket, Shaft Seal	Remcor	
16	51422	Gasket, Evaporator	Remcor	
17	32777	Compressor Starting Relay	Copeland	040-0001-11
18	60916	Compressor	Copeland	RSU50050-1AA-203
19	32719	Electric Box Assembly	Remcor	
20	31924	Timer, Total Cycle	National Controls	Z6T-12H35-001
21	31923	Timer, Interval Cycle	National Controls	Z4T-00035-061T
22	52011	Drain Assembly, Collector	Remcor	
23	51515	Harvest Bar, Cut	Remcor	
24	60739	Evaporator Coil	Remcor	
25	31673	Capacitor Run, Harvest Motor	Remcor	
26	32779	Overload Protector	Copeland	0400088-04
27	60204	Drier	Sporlan	C052S
28	60130	Accumulator Assembly	Remcor	

CABINET ASSEMBLY

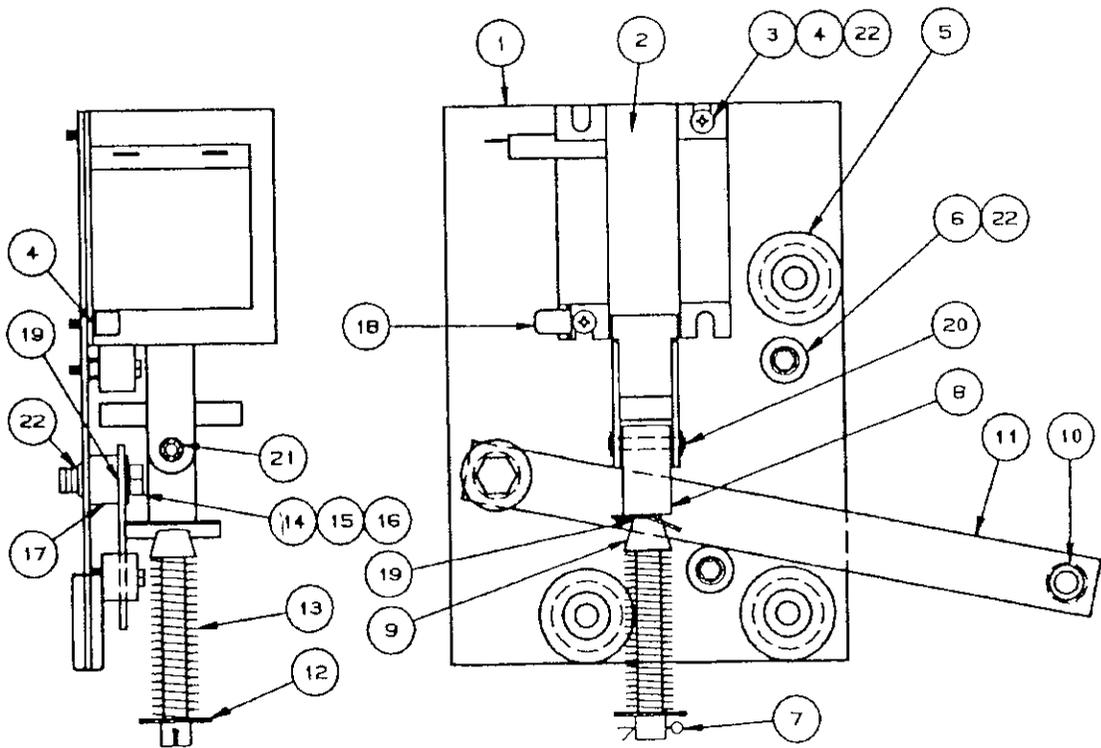


SERVICE PARTS LIST CABINET

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>MFR NAME</u>	<u>MFR P/N</u>
1	31560	Harvest Motor	FASCO Von Weise	V00708AD80
2	31568	Air Pump	Barnett	400-1911
3	31001	Bin Thermostat	G.E.	3ART-24410
4	27880	Panel, Access RS	Remcor	
5	27384	Panel, Back Removable	Remcor	
6	32778	Capacitor, Start	Copeland	014008-69
7	52009	Sink, Foamed Assembly	Remcor	
8	10145	Pin, Sink Extension	Remcor	
9	27412	Grill, Sink	Remcor	
10	52022	Merchandiser Assembly	Remcor	
11	32838	Dispenser Switch Actuator	Happ Controls	540000-310
12	30894	Switch, Dispenser	McGill Mfg. Co.	2602-1150
13	27385	Panel, Access LS	Remcor	
14	21517	Agitator	Remcor	
15	31093*	Solenoid Assembly	Remcor	
16	52005	Cover, Top	Remcor	

* See Page 27 for Solenoid Assembly Drawing.

SOLENOID ASSEMBLY



SOLENOID ASSEMBLY PARTS LIST

<u>ITEM NO.</u>	<u>PART NO.</u>	<u>QTY.</u>	<u>DESCRIPTION</u>
1	21493	1	Solenoid Mounting Plate
2#	31551	1	Solenoid Service Kit
3	70171	2	8-32 x 3/8 Phil Tr Hd Screw
4	70121	2	No. 8 Lockwasher
5	50752	3	Isolator
6*	50789	2	Bumper Assembly (Gate Stop)
7*	70423	1	Cotter Pin
8*	10080	1	Gate Lift Rod
9	10081	1	Gate Lift Rod Bushing
10	50754	1	Gate Arm Bearing
11	21492	1	Gate Lift Arm
12	70043	1	Flatwasher
13*	70422	1	Spring
14	70263	1	1/4-20 x 3/4 Hex Hd Screw
15	70048	1	1/4 Lockwasher
16	70066	1	1/4 Flatwasher
17	10077	1	Pivot Bearing
18	30227	1	1/4 Quick Connect Tab
19	50305	---	Lubricant (upon re-assembly only)
20*	21592	1	Solenoid Linkage Pin
21*	70433	2	Retainer Ring
22	50188	---	Loctite
--*	70438	---	Rebuilding Kit

* Indicates parts supplied in Rebuilding Kit.

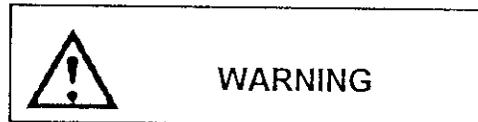
SERVICE PROCEDURES

HIGH PRESSURE CONTROL

The high pressure control is factory set at 400 PSIG. To check the setting, install a refrigeration discharge pressure gauge on the service port located on the compressor discharge line. Remove the front and right side panels to access this port and high pressure control. Disconnect the electrical power to the condenser fan motor leads in the control box. Run the icemaker to determine the control cut-out point. Adjust if necessary. This control is manual reset type; the reset lever is located behind the low pressure control next to the electric box on top of the high pressure control. Push in to reset. If the icemaker will not run after the control has been reset (with the refrigerant pressure less than 350 PSIG), replace the control. The adjustment screw is located on the top of the control.

BIN THERMOSTAT

1. The bin thermostat is located in the upper right rear corner of the unit under the cabinet flange.
2. To adjust the thermostat, remove the top plastic cover from the unit. The adjustment screw is located on the top of the bin thermostat and is accessible through the hole in the cabinet flange. The factory setting is 35°F cut-out/41°F cut-in. Before adjusting, check that the adjustment screw is turned clockwise to the stop position (CCW adjustment will raise the cut-out/cut-in temperatures).



Electrical power is on for the service procedure in item 3. Avoid contact with uninsulated parts in the control box.

3. The thermostat sensing bulb is located in the ice storage hopper on the upper left side wall. With the adjustment screw in the full cold position and no ice contacting the sensing bulb, check that the thermostat is closed (terminals 1 and 2). With ice contacting the thermostat bulb, terminals 1 and 2 should be open. To perform this check, use a voltmeter connected between thermostat #2 and neutral to determine the correct operation.
4. To replace a defective thermostat, disconnect electrical power to the unit. Remove the sensing bulb from the storage hopper (2 thumbscrews). Remove the thermostat from under the flange (2 screws) by disconnecting the two electrical leads. Install the new control, being careful not to kink the capillary tubing (sensing bulb) when routing it to the storage hopper.

SERVICE PROCEDURE CONTINUED

CONDENSER

The condenser should only have to be replaced if it has been physically damaged to the point that repair is not practical. Use a fine comb to straighten bent/pushed-in areas. If replace is necessary, the following equipment is required: vacuum pump, refrigeration manifold with gauges, brazing equipment and various hand tools. The replacement procedure has two steps: **Cabinet Removal** and **Condenser Replacement**.

CABINET REMOVAL

1. Remove ice from the hopper and all panels and plastic parts.
2. Disconnect electrical power to the unit.
3. Release refrigerant charge from the system through ports into an appropriate container/reclaim system.
4. Disconnect harness from gate solenoid (upper front) and dispenser push button switch.
5. Disconnect harness from the bin thermostat and air pump. Make sure that the harness is not secure to the cabinet.
6. Remove clear hoses from the discharge and suction of the air pump.
7. Remove the pins from behind the front cabinet flanges at the sink.
8. Remove sink.
9. Remove bracket mounting evaporator assembly to the cabinet.

10. Loosen two (2) 1/4 x 20 hex head screws securing the evaporator mounting bracket to the base. Tilt evaporator assembly towards the back to remove the evaporator ice chute from the hopper partition.
11. Remove partition (4 screws).
12. Remove screw securing cabinet to the base.
13. Lift the cabinet.

CONDENSER REPLACEMENT

1. Remove screws mounting condenser shroud from the base and condenser.
2. Remove screws mounting condenser to the base.
3. Unbrazed refrigerant lines from inlet and outlet of condenser.
4. Replace condenser.
5. It is also recommended to replace the filter drier.
6. After brazing, perform leak test of the new brazing joints.
7. Evacuate the system
8. Charge the system to the nameplate specification (1 Lb. of R-22).
9. Install cabinet - use reverse order of Step 1.

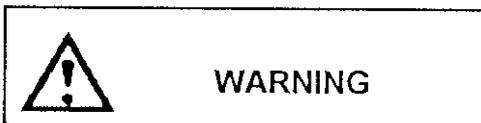
SERVICE PROCEDURE CONTINUED

10. Run the icemaker and check operation pressure in relation to the ambient temperature.
11. Install sink, panels and plastic parts.

CLEANING THE CONDENSER

1. Disconnect power to the unit.
2. Remove the right side and rear panels.
3. Remove all dirt/foreign matter build-up from the condenser fins (fan side). Be careful not to damage the fins. It is recommended that a power vacuum cleaner with a "crevice" tool attachment be used.

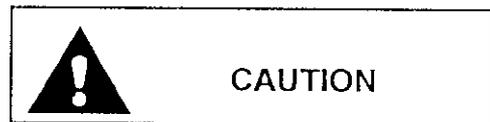
CONDENSER FAN MOTOR



Electrical power is on to the unit for the following procedure.

1. To check for a defective fan motor, remove the right and front panels.
2. Put the "stop/run" switch in the "stop" position. Verify that the fan blade is free to turn.
3. Put the "stop/run" switch in the "run" position. Refer to the wiring diagram for the following check (a voltmeter is required):

- A. Verify that the high pressure safety control (HPS) is closed and the unit is "calling" for ice (no ice on the bin thermostat sensing bulb in hopper).
- B. If compressor is running and motor wiring connections are secure, then the fan motor is defective.



The fan motor is connected in parallel to the compressor.

4. To replace the fan motor, disconnect the electrical power to the unit. Disconnect the electrical leads in the compressor electric box. Remove the four (4) mounting screws securing the fan motor bracket to the condensing unit assembly base. Remove the complete motor/bracket/fan blade assembly from the unit for ease of the motor replacement.

EXPANSION VALVE (TXV)

1. To check the TXV, hook-up a refrigeration suction pressure gauge to the appropriate access port.
2. While the icemaker is running, observe the gauge pressure. The nominal suction pressure range during the icemaking cycle is 17-35 PSIG. The low pressure safety control (LPS) "trips" at 10 PSIG. The TXV is operating properly if the suction pressure drops no lower than 16 PSIG.

SERVICE PROCEDURE CONTINUED

TXV

3. To replace the TXV, the following items are required: vacuum pump, refrigeration manifold with gauges, charging cylinder and various hand tools (wrenches, screwdrivers, etc). The procedure is as follows:
 - A. Disconnect the electrical power from the unit.
 - B. Release refrigerant charge from unit into an appropriate reclaiming system.
 - C. Remove insulation from TXV and sensing bulb.
 - D. Disconnect TXV from system (3 flare nut connections) and remove bulb from clamps on suction line.
 - E. Install replacement valve being careful to completely insulate TXV and bulb/suction line area.
 - F. Evacuate and recharge the system to nameplate specifications.
4. Observe that the unit functions normally in both the icemaking and harvest cycles; specifically that suction and discharge pressures are in the range of 17-35 PSIG and 200-280 PSIG.

WATER FILL VALVE

The water fill valve is located on the condensing unit assembly base, behind the compressor. To check for proper operation, put the "stop/run" switch in the "stop"

position. Depress the fill switch and hold. Water should overflow out the evaporator and to the overflow tube and collector drain. If water does not overflow and the water supply has been checked, then the fill valve is defective.

To replace the fill valve:

1. Disconnect electrical power to the unit.
2. Disconnect the electrical wires from the solenoid.
3. Remove the water outlet line from the valve.
4. Remove the two (2) screws securing the valve to the condensing unit assembly base. Remove the valve.
5. With the valve "free", remove the inlet fitting assembly (garden hose).
6. Install the inlet fitting assembly on the new valve. Repeat the above procedure in the reverse order to complete installation of the fill valve.

SERVICE PROCEDURE CONTINUED

COMPRESSOR

The compressor can exhibit basically two types of malfunctions. It will run but the refrigeration system produces little or no ice. In this case, check the suction and discharge pressures. A high suction pressure (greater than the normal range of 17-35 PSIG) and low discharge pressure (less than the normal range of 200-280 PSIG) indicates an internal valve problem and loss of compression. The second type of failure is characterized by the fact that the compressor will not run but there is voltage at the terminals. The cause is a defective motor (check for open or grounded windings).

In the case where the compressor is not operating, the electrical system can be checked as follows (a VOM type instrument is required):

1. Remove the front panel and the compressor electric box cover.
2. Put the "stop/run" switch in the "run" position.
3. Verify that there is voltage at the compressor.
4. Disconnect electrical power to the unit.
5. Disconnect wires so that continuity can be checked on the compressor electrical components.
6. Check continuity across the following:
 - A. Relay coil: if there is none, replace relay.

- B. Compressor C & S - no continuity - replace compressor (open start winding).
- C. Compressor C & R - no continuity - replace compressor (open run winding).
- D. Start capacitor terminals:
 - (1) VOM on RX1 scale - continuity replace capacitor (shorted).
 - (2) VOM on RX100,000 scale - no continuity - replace capacitor (open).
- E. Overload (TP) 1 and 3 - no continuity - replace TP (open).
- F. Compressor C and shell - continuity replace compressor (grounded motor).
- G. Check the continuity of the wires removed and reconnect to the proper terminals.
- H. If all of the above tests prove satisfactory and compressor still fails to operate properly, change the start relay as the new relay will eliminate any faulty electrical characteristics, such as improper pick-up or drop-out, which cannot be determined by the above tests. If the new relay fails to correct the difficulty, the compressor shall be considered to be inoperative because of internal defects and must be replaced.

SERVICE PROCEDURE CONTINUED

To replace the compressor, the following items are needed: vacuum pump, refrigeration manifold with gauges, charging cylinder, brazing equipment and various hand tools. The procedure is as follows:

1. Disconnect electrical power to the unit and remove wires from the compressor terminals.
2. Release refrigerant charge from the system.
3. Unbrazed discharge (next to service port) and suction lines.
4. Remove mounting bolts (4) and hardware from old compressor.
5. Install new compressor following the above steps in reverse order.
6. Evacuate and recharge system to nameplate specifications.
7. Run icemaker and perform the following items:
 - A. Check that suction/discharge pressures are in the normal operating ranges. Nominal discharge pressure 200 PSIG and suction pressure 17-35 PSIG at 70°F ambient air temperature and 50°F water temperature.
 - B. Check ice production capacity (see ice thickness adjustment section for procedure).

HOT GAS VALVE (HGV)

There are three situations to monitor for determining the proper functioning of the HGV. Install suction and discharge pressure gauges on the access ports removing the front, left and right side panels. First, observe the suction/discharge pressure during the icemaking cycle. The suction pressure (greater than 40 PSIG) range and a low discharge pressure (less than 115 PSIG) indicate a leaking valve seat problem and the HGV must be replaced. Secondly, observe the suction pressure during the hot gas portion of the harvest cycle. The minimum suction pressure is 70 PSIG; pressures less than this indicate the HGV is not operating properly and must be replaced. The third situation to analyze is the valve coil. If there is voltage but an audible "click" is not heard at the valve, replace the HGV (defective coil - valve not opening). The minimum suction pressure would also not be attained in this third case.

To replace the HGV, the following equipment is needed: vacuum pump, refrigeration manifold with gauges, charging cylinder, brazing equipment and various hand tools. The replacement procedure is as follows:

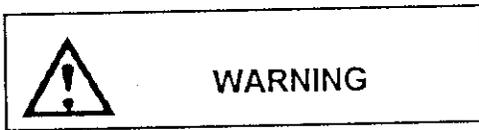
1. Disconnect electrical power to the unit and the leads to the valve.
2. Release the refrigerant charge from the unit into an appropriate reclaiming system.
3. Unbrazed the line connections at the valve. Remove the nut that attaches the valve to the mounting bracket.

SERVICE PROCEDURE CONTINUED

4. Install new valve.
5. Evacuate and recharge system to nameplate specification.

CYCLE TIMERS

The following procedure is to check for the proper functioning of the cycle timers. (A voltmeter is required):



Electrical power is on to the unit for this procedure. Avoid contact with uninsulated parts in the electrical control box.

1. Remove the lower front panel and the electrical control box cover.
2. Put the "stop/run" switch in the "stop" position. Allow system pressures to equalize before proceeding.
3. Put the "stop/run" switch in the "run" position. The repeat cycle timer (RCT) should immediately start the hot gas cycle (approximately 35 seconds).
- 3a. If the hot gas valve is not energized, check for voltage between neutral (white on terminal board) and the "NO" terminal (blue wire) of the RCT. If there is voltage, check the hot gas valve. If there is no voltage, replace timer.
4. After completion of the hot gas cycle, check for voltage at the "NC" terminals of the RCT and neutral. If there is no voltage at either or both of these terminals, the timer is defective.
5. If voltage is found in step 4, then check for voltage at the "NO" terminals of the interval timer (IT) and neutral. If there is no voltage at either or both of these terminals, the timer is defective.
- 5a. The timing range for the interval timer is normally set at 25 to 30 seconds. If voltage is found in Step 5, then check the water fill valve, harvest motor and/or agitator motor, depending on which event is not occurring.
6. Upon completion of the events in Step 5a, check for voltage at the "NC" terminals of the interval timer. If there is no voltage at either or both of these terminals, the timer is defective.
7. At the completion of the icemaking cycle (8 to 9 minutes), the repeat cycle timer should again initiate the hot gas event. To determine proper timer function, perform the voltage check of Step 3a.

REMCOR PRODUCTS COMPANY SPIRAL ICE MAKER DISPENSER WARRANTY

Remcor Products Company warrants to the original purchaser of each new Remcor Spiral Icemaker Dispenser, for a period of 21 months from date of installation or 24 months from date of shipment, whichever occurs first, that all parts shall be free from defects in material and workmanship under normal use and service. The stainless steel ice maker evaporator is specifically warranted for a period of two years; the compressor for a period of five years; and, labor cost to repair factory defective parts or workmanship is covered for a period of their days from date of installation. Labor warranty does not cover normal installation or start-up.

Under this warranty, as defective part(s) is to be returned to Remcor Products Company, 500 Regency Drive, Glendale Heights, Illinois 60139-2268 (telephone: 708-980-6900) and shall be limited exclusively to repairing or replacing F.O.B. Factory, such part or parts which it concludes upon examination to be defective under the terms of this warranty. **Return of any disassembled will void warranty on any part.** The decision of our Service Department regarding the warranty of parts will be final.

The warranties defined herein shall not apply to any damage or defects or arising from accident, misapplication, abuse, misuse, neglect, alteration, acts of vandalism, flood, fire, act of God or any other occurrences beyond the control of Remcor Products Company. Warranty validity also requires that all instructions have been followed and adhered to as provided in the Owner's Manual included with each unit.

Remcor's warranty responsibility ceases if shipment is not received by you in good order and in accordance with quantity shown on invoice or Packing Sheet; if you accept shipment from the Transportation Company in damaged condition without having a proper notation made by the Station Agency, you do so at your own risk. If cartons are in apparent good order, but upon opening, contents are found to be damaged, call agent or adjuster to view same and have him mark the freight bill relative to such concealed damage. This procedure must be executed with fifteen days after delivery.

Prior to return any material, (part or unit), a **Return of Material Authorization (RMA)** must be obtained. To obtain this authorization, please provide reason for return, model number, serial number and part number. Either call or write Remcor's Parts Service Department and an authorization number and tag will then be issued - this tag must accompany the material returned. **No representative, dealer, distributor or any person** is authorized to make any other decisions regarding the warranty or liability in accordance with Remcor's Warranty. Any materials that do not have a pre-issued Return Material Authorization number when received will be refused by remcor, and returned to the sender (freight collect).

Remcor Products Company will not honor, or assume any responsibility for any expenses (including labor), incurred in the field for the repair of equipment covered in our Warranty unless authorization has been granted from Remcor's Service Department prior to work being performed. The request for repair Warranty work will only apply to units shipped from Remcor within a thirty day time period of request. It will further be at the discretion of Remcor to decide if said labor will be reimbursed in full or partial payment. Remcor Products Company will also control the right to decline payment - all decisions will be based on circumstances prevailing. Charges for repeat service call on the same unit to rectify the same problem previously corrected shall not be honored. Remcor shall retain the right to select, or recommend another company to complete the necessary repair work.



The inherent nature of ice may cause spillage onto counter of floor area. The Owner or Operator is cautioned to maintain these areas in a clean, ice-free condition.

Remcor Products Company, 500 Regency Drive, Glendale Heights, IL 60139-2268
Telephone: (708)980-6900